

REMARKS

Claims 1-34 are pending for further examination. Claims 1, 3, 4, 9, 10, 15, 16, 21, 23 and 24 are currently amended. Claims 29-34 are new.

Applicant thanks the Examiner for recognizing that claims 14 and 20 include allowable subject matter.

Independent claim 1 and dependent claims 2-5 were rejected as anticipated by Starr (U.S. Patent No. 6,470,415). Dependent claims 6-8 were rejected as unpatentable over Starr.

In view of the following remarks, applicant respectfully requests withdrawal of the rejections and allowance of the claims.

Currently amended claim 1 recites processing a second enqueue or dequeue request with respect to a queue prior to the completion of a first enqueue or dequeue request with respect to that queue and storing information describing a structure of the queue in a cache memory, in which the cache memory is "implemented in a distributed manner." For example, pg. 5, lines 16-21 of the present application disclose a cache of data structures that describe a queue in which a "tag portion 44a of the cache resides in the queue manager 27" and a "data store portion 44b of the cache resides in a memory controller 34." Another example on pg. 12, lines 10-20 of the specification discloses that a cache of queue descriptors may be "implemented in a distributed manner" in which a "tag portion 44a resides in the memory controller 34" and a "data store portion 44b resides in the first memory 30." Storing the cache memory in a distributed manner can, in some implementations, enable faster processing of data buffers.

In contrast, the Starr patent does not disclose or suggest implementing a cache memory, that stores information describing a structure of a queue, in a distributed manner. The Starr patent discloses a device for queuing information that includes a first queue 20 formed of a combination of SRAM 22 and DRAM 25 storage units and a second queue 27 formed as a combination of SRAM 30 and DRAM 25 storage units (col. 2, lines 44-47). When a device 10 wants to store data in a queue, information regarding that data is sent to a queue manager 220

(col. 3, lines 49-51, col. 4, lines 58-60). Requests for queues are handled by priority logic Arbiter 235 in the queue manager 220 (*see* FIG 5, col. 5, lines 2-4). A dual ported QRAM 245, in the queue manager 220 stores variables Head Write Pointer, Head Read Pointer, Tail Write Pointer, Tail Read Pointer, Body Write Pointer, Body Read Pointer and Queue Size that correspond to the queue's SRAM and DRAM conditions (col. 5, lines 12-18). After the Arbiter 235 has selected the next operation to be performed, the variables of QRAM 245 are fetched and modified according to the selected operation (col. 5, lines 19-21).

The Office action alleges that the QRAM 245 corresponds to the claimed cache memory and that the variables stored in QRAM 245 correspond to the claimed stored "information describing a structure of the queue" (pg. 3, Office action).

Even if QRAM 245 corresponds to the claimed cache memory and the variables correspond to the claimed stored "information describing a structure of [a] queue," which the applicants dispute, QRAM 245 is not "implemented in a distributed manner" as recited by present claim 1. Instead, as FIG. 3 of the Starr patent clearly shows, QRAM 245 is included *exclusively* in queue manager 220. There is no suggestion or disclosure, at all, in the Starr patent that any portion of QRAM 245 is stored outside of queue manager 220 or that QRAM 245 is "implemented in a distributed manner."

At least for the foregoing reasons, claim 1 should be allowed. Claims 2-8 and 29-30 depend from claim 1 and should be allowed for at least the same reasons as claim 1.

Claims 9-13, 15-19 and 21-28 were also rejected as unpatentable over the Starr patent.

Each of the independent claims 9, 15 and 21 recite features similar to those discussed above with reference to claim 1. Accordingly, each of those claims should be allowable for at least the same reasons as claim 1.

Claims 10-13, 16-19, 22-28 and 31-34 depend from claims 9, 15 and 21 and should be allowable for at least the same reasons as the claims from which they respectively depend.

Furthermore, the dependent claims recite additional features that are not disclosed or suggested by the Starr patent. For example, currently amended claim 4 recites “causing to store data in the queue” related to first and second requests using a linked list data structure. Support for this feature is disclosed in the present application, for example, at page 8, line 30 – page 9, line 3 and page 9, lines 18-22. In some implementations, using a queue which includes a linked list data structure can allow data stored in the queue to be quickly enqueued or dequeued and may enable a flexible approach to processing a large number of queues.

In contrast, the Starr patent does not disclose or suggest storing data, in a queue, related to first and second requests “using a linked list data structure.” Although the Starr patent discloses storing pointers regarding queues (*e.g.*, Head Write Pointer, Head Read Pointer, etc., *see* col. 5, lines 12-18), these pointers are stored in QRAM 245, which the Office action alleges corresponds to the claimed cache memory, and are not stored in first queue 20 or second queue 27, which the Office action alleges correspond to the claimed queue (*see* pg. 2, para. 7, Office action).

At least for this additional reason, claim 4 should be allowed.

Claims 10, 16 and 24 also recite a variation of storing data in a queue using a linked list data structure and should be allowed for at least the same reason as claim 4.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Conclusion

In view of the above remarks, all claims are allowable and a notice of allowance should be issued.

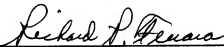
The excess claim fee in the amount of \$300 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to Deposit Account No. 06-1050.

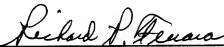
Respectfully submitted,

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